



PATENT
Attorney Docket No: A-63098-1/RFT/JJD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:) Examiner: Pak, Michael
)
 LESTER et al.) Group Art Unit: 1646
)
 Serial No. 09/039,927)
)
 Filed: March 16, 1998)
)
 For: INWARD RECTIFIER, G-PROTEIN)
 ACTIVATED, MAMMALIAN,)
 POTASSIUM CHANNELS AND)
 USES THEREOF)

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CERTIFICATE OF MAILING

I hereby certify that this correspondence, including listed enclosures, is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Box AF, Washington, DC 20231 on

Date: May 21, 2001

Signed: Monica Carlos

Monica Carlos

AMENDMENT AND RESPONSE AFTER FINAL

Assistant Commissioner
for Patents
Box AF
Washington, DC 20231

Sir:

This is in response to the Final Office Action mailed November 21, 2000. It is accompanied by a petition for one month extension of time and the requisite fee, making this a timely response. The Commissioner is authorized to charge any additional fee which may be required, including for extension of time, or credit any overpayment to Deposit Account No. 06-1300 (Our Order No. A-63098-1/RFT/JJD).

Please enter the new claim set below and consider the remarks herein.

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Serial No.: 09/039,927

Filed: March 16, 1998

18. (Twice Amended) A method for screening for agents that inhibit the activity of a Kir3.0 channel, the method comprising:

- a) forming a functional Kir3.0 channel from at least two different inward rectifier, G-protein activated, mammalian, potassium Kir3.0 polypeptides;
- b) combining the candidate agent with said Kir3.0 channel under conditions that permit inward K⁺ current;
- c) determining the induced current, wherein a reduction in said induced current in the presence of said agent as compared to a control is indicative that said agent inhibits the activity of a Kir3.0 channel.

19. The method of Claim 18, wherein said Kir3.0 polypeptides are selected from the group consisting of polypeptides having at least about 50% amino acid sequence identity with Kir3.1, Kir3.2, Kir3.3 or Kir3.4.

20. The method of Claim 18, wherein said Kir3.0 polypeptides are selected from the group consisting of polypeptides encoded by nucleic acids that hybridize under low stringency conditions with a complement of a nucleic acid which encodes Kir3.1, Kir3.2, Kir3.3 or Kir3.4.

21. A method for screening for agents that inhibit the activity of a Kir3.0 channel, the method comprising:

- a) providing a functional Kir3.0 channel formed by introducing into an expression host cell a nucleic acid encoding a first mammalian Kir3.0 polypeptide and a nucleic acid encoding a second mammalian Kir3.0 polypeptide under conditions that permit expression of said nucleic acid, wherein said first and second mammalian Kir3.0 polypeptides are different

Serial No.: 09/039,927

Filed: March 16, 1998

from each other, wherein said mammalian Kir3.0 polypeptides assemble to form a functional Kir3.0 in said expression host cell;

- b) combining a candidate agent with a functional Kir3.0 channel under conditions that permit inward K⁺ current;
- c) determining the induced current, wherein a decrease in said induced current in the presence of said agent as compared to a control is indicative that said agent inhibits the activity of a Kir3.0 channel.

22. The method of Claim 21, wherein said nucleic acid encoding said mammalian Kir3.0 polypeptides are selected from the group consisting of nucleic acids that hybridize under low stringency conditions with a complement of a nucleic acid which encodes Kir3.1, Kir3.2, Kir3.3 or Kir3.4.

23. A screening assay for identifying materials which inhibit the activity of a Kir3.0 channel, comprising the steps of:

- (a) introducing nucleic acid encoding a Kir3.0 channel formed from at least two different inward rectifier, G-protein activated, mammalian, potassium Kir3.0 polypeptides into an expression system and causing the expression system to express said nucleic acid encoding a Kir3.0 channel;
- (b) contacting the Kir3.0 channel with one or more candidate channel-inhibiting materials;
- (c) selecting candidate material(s) which inhibit said activity relative to a control performed in their absence.

24. The method of Claim 23, wherein said nucleic acid encoding a Kir3.0 channel consists essentially of nucleic acids that hybridize under low stringency conditions with a complement of a nucleic acid which encodes Kir3.1, Kir3.2, Kir3.3 or Kir3.4.